

WHAT IS CLAIMED IS:

1. A print layout device for providing a layout for a recording sheet comprising:

setting means for setting a margin for a sheet;

determination means for ascertaining the size of a printable area based on said margin that is set;

enlargement/reduction means for enlarging or reducing data to be printed in consonance with said printable area; and

layout means for providing a layout for said margin for said sheet and for said data to be printed that are enlarged or reduced, and for employing said layout to control the printing.

2. A print layout device according to claim 1, wherein said setting means is capable of independently setting vertical and horizontal margins for a sheet.

3. A print layout device according to claim 1, wherein said setting means is capable of setting a binding margin adjacent to the line of the fold in a sheet that is folded once.

4. A print layout device according to claim 3, wherein said setting means is capable of setting margins that are equidistant from the line of the fold in the center of a sheet that is folded once.

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5. A print layout device according to claim 1,
wherein said enlargement/reduction means enlarges or
reduces data to be printed using an
enlargement/reduction ratio that provides a maximum
5 inclusive area that does not exceed the limits of a
printable area.

6. A print layout device according to claim 1,
wherein said enlargement/reduction means employs a
10 designated, arbitrary enlargement/reduction ratio to
enlarge or reduce said data to be printed.

7. A print layout device according to claim 1,
wherein said enlargement/reduction means so enlarges or
15 reduces said data to be printed that the ratio of the
length and the width of said data, after being enlarged
or reduced, to that of the original data is not
changed.

8. A print layout device according to claim 1,
wherein said layout means centers said enlarged or
reduced data to be printed in an area on a sheet that
excludes the binding margins, and performs the layout
process.

9. A print layout device according to claim 1,
further comprising: storage means for storing size

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information for data to be printed that is used for the determination of an enlargement/reduction ratio.

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10. A print layout device according to claim 1,
5 wherein, when a size for data to be printed and a sheet size differ, said enlargement/reduction means employs said size of said data to be printed and said sheet size to obtain an enlargement/reduction ratio for providing said binding margin, and said layout means
10 performs a layout process for a sheet based on said enlargement/reduction ratio that is obtained and, in accordance with said layout, prints out said data to be printed.

15 11. A print layout device according to claim 1, wherein said layout means prints data for a plurality of pages on one sheet using a layout for a sheet for which a margin has been set.

20 12. A print layout device according to claim 1, wherein said layout means is capable of adjusting the position of binding margins on the obverse and the reverse sides of a sheet, so that for double-sided printing said binding margin will be located at the
25 same position on said sheet.

13. A print layout device according to claim 1,

which is applicable for a system by which said data to be printed are transmitted by an upper-level device, such as a computer, to a printing device, such as a printer to perform a printing process.

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14. A print layout device according to claim 13, further comprising:

10 saving means for temporarily saving data in an intermediate code form that differs from that for said data to be printed; and

preparation means for preparing data to be printed, based on said data that are temporarily saved.

15 15. A print layout method for providing a layout for a recording sheet comprising:

a setting step of setting a margin for a sheet;

a determination step of ascertaining the size of a printable area based on said margin that is set;

20 an enlargement/reduction step of enlarging or reducing data to be printed in consonance with said printable area; and

25 a layout step of providing a layout for said margin for said sheet and for said data to be printed that are enlarged or reduced, and of employing said layout to control the printing.

16. A print layout method according to claim 15,

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wherein at said setting step, vertical and horizontal margins are capable of being independently set for a sheet.

5 17. A print layout method according to claim 15, wherein at said setting step a binding margin is capable of being set adjacent to the line of the fold in a sheet that is folded once.

10 18. A print layout method according to claim 17, wherein at said setting step margins that are equidistant from the line of the fold are capable of being set in the center of a sheet that is folded once.

15 19. A print layout method according to claim 15, wherein at said enlargement/reduction step data to be printed are enlarged or reduced using an enlargement/reduction ratio that provides a maximum inclusive area that does not exceed the limits of a
20 printable area.

 20. A print layout method according to claim 15, wherein, at said enlargement/reduction step, a designated, arbitrary enlargement/reduction ratio is
25 employed to enlarge or reduce said data to be printed.

 21. A print layout method according to claim 15,

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wherein at said enlargement/reduction step said data to be printed are so enlarged or reduced that the ratio of the length and the width of said data, after being enlarged or reduced, to that of the original data is not changed.

22. A print layout method according to claim 15, wherein at said layout step said enlarged or reduced data to be printed are centered in an area on a sheet that excludes the binding margins, and the layout process is performed.

23. A print layout method according to claim 15, further comprising: storage means for storing size information for data to be printed that is used for the determination of an enlargement/reduction ratio.

24. A print layout method according to claim 15, wherein, when a size for data to be printed and a sheet size differ, at said enlargement/reduction step, said size of said data to be printed and said sheet size are employed to obtain an enlargement/reduction ratio for providing said binding margin, and wherein at said layout step a layout process is performed for a sheet based on said enlargement/reduction ratio that is obtained and, in accordance with said layout, said data to be printed are printed out.

25. A print layout method according to claim 15, wherein at said layout step data for a plurality of pages are printed on one sheet using a layout for a sheet for which a margin has been set.

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26. A print layout method according to claim 15, wherein at said layout step the position of binding margins is capable of being adjusted on the obverse and the reverse sides of a sheet, so that for double-sided printing said binding margin is located at the same position on said sheet.

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27. A print layout method according to claim 15, which is applicable for a system by which said data to be printed are transmitted by an upper-level device, such as a computer, to a printing device, such as a printer to perform a printing process.

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28. A print layout method according to claim 27, further comprising:

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a saving step of temporarily saving data in an intermediate code form that differs from that for said data to be printed; and

a preparation step of preparing data to be printed based on said data that are temporarily saved.

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29. A memory medium on which is stored a program

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for providing a layout for a recording sheet, said program comprising:

a setting step of setting a margin for a sheet;

a determination step of ascertaining the size of a printable area based on said margin that is set;

an enlargement/reduction step of enlarging or reducing data to be printed in consonance with said printable area; and

a layout step of providing a layout for said margin for said sheet and for said data to be printed that are enlarged or reduced, and of employing said layout to control the printing.

30. A memory medium according to claim 29, wherein at said setting step, vertical and horizontal margins are capable of being independently set for a sheet.

31. A memory medium according to claim 29, wherein at said setting step a binding margin is capable of being set adjacent to the line of the fold in a sheet that is folded once.

32. A memory medium according to claim 29, wherein at said setting step margins that are equidistant from the line of the fold are capable of being set in the center of a sheet that is folded once.

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33. A memory medium according to claim 29,
wherein at said enlargement/reduction step data to be
printed are enlarged or reduced using an
enlargement/reduction ratio that provides a maximum
5 inclusive area that does not exceed the limits of a
printable area.

34. A memory medium according to claim 29,
wherein, at said enlargement/reduction step, a
10 designated, arbitrary enlargement/reduction ratio is
employed to enlarge or reduce said data to be printed.

35. A memory medium according to claim 29,
wherein at said enlargement/reduction step said data to
15 be printed are so enlarged or reduced that the ratio of
the length and the width of said data, after being
enlarged or reduced, to that of the original data is
not changed.

36. A memory medium according to claim 29,
20 wherein at said layout step said enlarged or reduced
data to be printed are centered in an area on a sheet
that excludes the binding margins, and the layout
process is performed.

37. A memory medium according to claim 29,
25 further comprising: storage means for storing size

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information for data to be printed that is used for the determination of an enlargement/reduction ratio.

38. A memory medium according to claim 29,
5 wherein, when a size for data to be printed and a sheet size differ, at said enlargement/reduction step, said size of said data to be printed and said sheet size are employed to obtain an enlargement/reduction ratio for providing said binding margin, and wherein at said
10 layout step a layout process is performed for a sheet based on said enlargement/reduction ratio that is obtained and, in accordance with said layout, said data to be printed are printed out.

39. A memory medium according to claim 29,
15 wherein at said layout step data for a plurality of pages are printed on one sheet using a layout for a sheet for which a margin has been set.

40. A memory medium according to claim 29,
20 wherein at said layout step the position of binding margins is capable of being adjusted on the obverse and the reverse sides of a sheet, so that for double-sided printing said binding margin is located at the same
25 position on said sheet.

41. A memory medium according to claim 29, which

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is applicable for a system by which said data to be printed are transmitted by an upper-level device, such as a computer, to a printing device, such as a printer to perform a printing process.

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42. A memory medium according to claim 29, in which is stored a program that further comprises:

10 a saving step of temporarily saving data in an intermediate code form that differs from that for said data to be printed; and

a preparation step of preparing data to be printed, based on said data that are temporarily saved.

15 43. A print layout device for performing a layout process for a recording sheet comprising:

dispatcher means for receiving, from drawing means and depending on which OS is used, common print information that is generated and is based on drawing data prepared by an arbitrary application;

20 intermediate data conversion means for converting into intermediate data said print information received by said dispatcher means and for storing said intermediate data in spooling means;

25 setting means for setting a margin for said sheet; processing means for processing said intermediate data stored in said spooling means in consonance with a printable area based on said margin that is acquired,

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and for outputting said processed intermediate data in
said drawing data form to said drawing means; and

print data generation means for converting said
print information received by said dispatcher means
5 into print data consisting of a control command and for
outputting said print data to an external device.

44. A print layout device according to claim 43,
wherein said processing means changes the size of said
10 intermediate data to a maximum size that is available
in said printable area and for which the ratio of the
width and the length of said drawing data is not
changed.

45. A print layout device according to claim 43,
15 wherein said drawing data are GDI (Graphical Device
Interface) data.

46. A print layout device according to claim 43,
20 wherein said print information is DDI (Device Driver
Interface) information.

47. A print layout device according to claim 43,
wherein said data to be printed are written in a page
25 description language.

48. A print layout method for performing a layout

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process for a recording sheet comprising:

5 a reception step of receiving, from drawing means and depending on which OS is used, common print information that is generated and is based on drawing data prepared by an arbitrary application;

an intermediate data conversion step of converting into intermediate data said print information received at said reception step, and of storing said intermediate data in spooling means;

10 a setting step of setting a margin for said sheet;

a processing step of processing said intermediate data stored in said spooling means in consonance with a printable area based on said margin that is acquired, and of outputting said processed intermediate data in
15 said drawing data form to said drawing means; and

a print data generation step of converting said print information received at said reception step into print data consisting of a control command and for
20 outputting said print data to an external device.

25 49. A print layout method according to claim 48, wherein at said processing step the size of said intermediate data is changed to a maximum size that is available in said printable area and for which the ratio of the width and the length of said drawing data is not changed.

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50. A print layout method according to claim 48, wherein said drawing data are GDI (Graphical Device Interface) data.

5 51. A print layout method according to claim 48, wherein said print information is DDI (Device Driver Interface) information.

10 52. A print layout method according to claim 48, wherein said data to be printed are written in a page description language.

15 53. A memory medium on which is stored a print layout program for performing a layout process for a recording sheet, said print layout program comprising:
a reception step of receiving, from drawing means and depending on which OS is used, common print information that is generated and is based on drawing data prepared by an arbitrary application;
20 an intermediate data conversion step of converting into intermediate data said print information received at said reception step, and of storing said intermediate data in spooling means;
a setting step of setting a margin for said sheet;
25 a processing step of processing said intermediate data stored in said spooling means in consonance with a printable area based on said margin that is acquired,

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and of outputting said processed intermediate data in
said drawing data form to said drawing means; and

a print data generation step of converting said
print information received at said reception step into
5 print data consisting of a control command and for
outputting said print data to an external device.

54. A memory medium according to claim 53,
wherein at said processing step the size of said
10 intermediate data is changed to a maximum size that is
available in said printable area and for which the
ratio of the width and the length of said drawing data
is not changed.

55. A memory medium according to claim 53,
wherein said drawing data are GDI (Graphical Device
15 Interface) data.

56. A memory medium according to claim 53,
20 wherein said print information is DDI (Device Driver
Interface) information.

57. A memory medium according to claim 53,
wherein said data to be printed are written in a page
25 description language.

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